REMARKS

Reconsideration of the application is respectfully requested in view of the above amendments and the comments that follow. Entry of the foregoing amendments is requested in order to place this application in condition for allowance or in better form for consideration on appeal.

Claims 1 and 18 have been amended more particularly define Applicants' claimed invention. Claims 9, 12, 22 and 23 have been canceled due to the incorporation of the subject matter thereof into claims 1 and 18 as appropriate. Basis for the amendment of claims 1 and 18 can be found in paragraphs [0007] and [0010] and original claims 9, 12, 22 and 23 of Applicant's specification as appropriate.

The final rejection of claims 1-24 under 35 U.S.C. 103(a) as being unpatentable over Milovich et al. (U.S. Patent No. 5,073,589) in view of Carbone et al. (U.S. Patent No. 5,296,183) is respectfully traversed.

The primary reference, Milovich et al., discloses a backing material for a thin metal-faced composite tool. The backing is a mix of a resin and fibers that are combined to form a lattice. The fibers, prior to combining with the resin, are treated for chemical adhesion. A thin walled metal shell is formed on a pattern by spraying a molten powder onto a release layer of the pattern surface. The thickness of the thin walled metal shell is between 0.030 and 0.250 inches. The resins function as adhesives to bond the various fillers and fibers to each other and to the thin walled metal tool shell.

As noted by the Examiner in the Office Action, Milovich et al. does not teach the porosity and theoretical density of a thermally sprayed layer or that the thermal spraying parameters can be adjusted such that an inner dense layer is formed first followed by an outer porous layer as claimed by Applicants.

Nowhere does Milovich et al. disclose or suggest a method for making a thermal sprayed material surface infused or impregnated composite object by

applying a thermal spray material layer onto a desired pattern. In accordance with Applicants' claims, the thermal sprayed material layer is formed by controlling thermal spray parameters to produce an inner dense layer of thermal spray material and a more porous outer layer as the thickness of the thermal spray material layer increases; wherein said thermal spray material is applied at a gun-to-substrate linear velocity of greater than about 0.5 meters/second or a power input factor from about 0.5 to about 45 watts/millimeter/second, said thermal spray material layer is applied to a thickness of between about 0.0001 and about 3 inches, said inner layer has a theoretical density of between about 95 and about 99.9 percent and comprises from about 5 to about 95 percent of the thickness of said thermal spray material layer, and said outer layer has a porosity of between about 5 and about 95 percent and comprises from about 5 to about 95 percent of the thickness of said thermal spray material layer.

Milovich et al. actually teaches away from Applicants' claimed invention in that the resins of Milovich et al. function as adhesives to bond the various fillers and fibers to the thin walled metal tool shell. In contrast, Applicants' claims require integrating the thermal spray material layer into a composite object by backing and infusing the outer porous portion of the thermal sprayed material layer with a resin.

The secondary reference, Carbone et al., adds nothing to make up for the deficiencies of Milovich et al. as a primary reference. Carbone et al. discloses a method for producing a unitary part having a property enhancing coating bonded to a core of either plastic or fiber reinforced composite.

As noted by the Examiner in the Office Action, like Milovich et al., Carbone et al. does not teach the porosity and theoretical density of a thermally sprayed layer or that the thermal spraying parameters can be adjusted such that an inner dense layer is formed first followed by an outer porous layer as claimed by Applicants.

Nowhere does Carbone et al. disclose or suggest a method for making a thermal sprayed material surface infused or impregnated composite object by applying a thermal spray material layer onto a desired pattern. In accordance with Applicants' claims, the thermal sprayed material layer is formed by controlling thermal spray parameters to produce an inner dense layer of thermal spray material and a more porous outer layer as the thickness of the thermal spray material layer increases; wherein said thermal spray material is applied at a gun-to-substrate linear velocity of greater than about 0.5 meters/second or a power input factor from about 0.5 to about 45 watts/millimeter/second, said thermal spray material layer is applied to a thickness of between about 0.0001 and about 3 inches, said inner layer has a theoretical density of between about 95 and about 99.9 percent and comprises from about 5 to about 95 percent of the thickness of said thermal spray material layer, and said outer layer has a porosity of between about 5 and about 95 percent and comprises from about 5 to about 95 percent of the thickness of said thermal spray material layer.

Applicants submit that alleged obviousness of the instantly claimed invention must be predicated on something more than it would have been obvious to try controlling thermal spray parameters to produce an inner dense layer of thermal spray material and a more porous outer layer as the thickness of the thermal spray material layer increases; wherein said inner layer has a theoretical density of between about 95 and about 99.9 percent and said outer layer has a porosity of between about 5 and about 95 percent, to arrive at Applicants' claimed method and composite object or the possibility that such a particularly defined method or composite object would have been considered in the future, having been neglected in the past. See Ex parte Argabright et al. 161 USPQ 703. It is submitted that "obvious to try" is not a valid test of patentability, and patentability determinations based on that as a test are contrary to statute. See In re Mercier 515 F2d 1161, 185 USPQ 774; In re Antonie 559 F2d 618, 195 USPQ 6; In re

Goodwin et al. 576 F2d 375, 198 USPQ 1; and In re Tomlinson et al. 363 F2d 928, 150 USPQ 623.

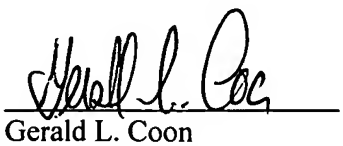
Clearly, it is only by hindsight that the Examiner could impute to the composites and methods of Milovich et al. and Carbone et al. controlled thermal spray parameters to produce a thermal spray material layer having an inner dense layer of thermal spray material and a more porous outer layer; wherein said inner layer has a theoretical density of between about 95 and about 99.9 percent and said outer layer has a porosity of between about 5 and about 95 percent, to arrive at the instantly claimed method and composite object, and such hindsight obviousness after the invention has been made is not the proper test. See In re Carroll 601 F2d 1184, 202 USPQ 571.

In view of the amendment of claims 1 and 18 and the above arguments, this final rejection is deemed improper and should be withdrawn.

It is respectfully submitted that the final rejection of record is improper and that the application is in condition for allowance. Accordingly, reconsideration and allowance of all claims are courteously solicited.

A notice of appeal was filed May 15, 2006 together with a three (3) month extension of time. An appeal brief in support of the appeal was due July 15, 2006. Accordingly, submitted herewith is a petition for an extension of time for one (1) month. Please charge fees/surcharge which may be required by this paper, or credit any overpayment, to Deposit Account No. 16-2440.

Respectfully submitted,



Gerald L. Coon
Reg. No. 29910
Attorney for Assignee

Danbury, Connecticut 06810-5113
(203) 837-2292
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Attorney Ref.: D-21369